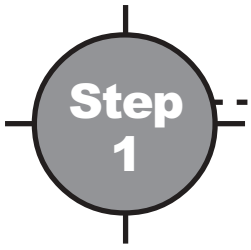
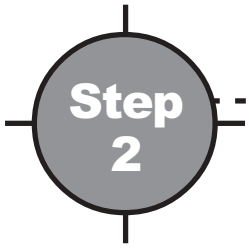
Land Quality

Printers generate different types of waste that may impact environmental quality or public health if discarded improperly. Different wastes must be handled and disposed according to IDEM requirements. Here's how to determine the proper method of waste disposal.



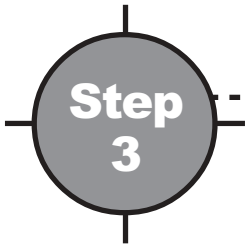
Try Waste Reduction First

- As a business owner and operator, you know that the less waste you generate, the more your bottom line improves.
- Look at how you can reduce wastes at their sources. Determine the ratio of material used versus waste generated. Then look at the process to see where you can improve the ratio.



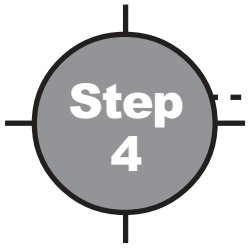
Is it a Hazardous Waste?

- Most printer wastes are regulated because they are ignitable, corrosive or toxic. Some wastes may also contain specifically listed solvents, such as toluene or methyl ethyl ketone.
- You must accumulate, handle and dispose of these wastes according to IDEM management requirements. See page 21.



Is it a Universal Waste?

- Printers may generate used Ni-Cad or small lead acid batteries, or used fluorescent lamps.
- These wastes are hazardous, if disposed.
- But if they are sent offsite for recycling, these wastes are subject to fewer requirements than hazardous wastes. See page 39.



Is It a Used Oil?

- Waste oil includes: press oil, lubricants, motor oils, etc. Oily debris, materials contaminated or soaked with oil are also included.
- These oily wastes must be accumulated in containers and sent offsite for proper disposal. See page 34.

Hazardous Waste

As a responsible business owner, you must manage all your wastes in a safe and environmentally responsible manner. Some printer wastes may be regulated as hazardous wastes. USEPA and IDEM regulate businesses that generate hazardous wastes as well as the facilities that store, treat or dispose of those wastes. Most printers generate hazardous wastes, but do not treat or dispose of them. Instead, printers arrange for transportation and then treatment or disposal of their hazardous wastes at other facilities. These facilities and transporters must be registered to handle hazardous waste. IDEM regulations require generators, transporters and facilities to properly manage their hazardous wastes.

The IDEM regulations place the burden on you, as a waste generator, to properly identify and dispose of your wastes. You retain responsibility even when other companies dispose of your wastes – this is cradle-to-grave responsibility. You may be subject to significant penalties if you fail to properly identify your hazardous waste and ensure its proper management.

By choosing materials that do not generate hazardous waste, you may be able to reduce your company's liability. Generating less hazardous waste may also reduce the IDEM requirements that apply to your shop.

Important Definitions

Hazardous Waste is a waste that, because of its source, constituents, or characteristics is regulated as hazardous. If improperly managed or disposed, the waste may impact the environment or threaten public health.

Generator means a business or person that generates hazardous waste.

Transporter means an IDEM-registered company that transports hazardous waste from the generator to a treatment/disposal facility.

Treatment or Disposal Facility means a facility registered by IDEM to recycle, store, treat or dispose of hazardous waste.

Generator Status refers to three size categories of hazardous waste generators based on monthly generation rates and quantities stored.

EPA ID Number is an identification number assigned to a hazardous waste generator, transporter or disposal facility. This ID number is unique to company and location.

Satellite Accumulation Area means a designated location within a work area where hazardous waste is accumulated near its point of generation and under the control of the operator of the process generating the waste.

Hazardous Waste Storage Area means a location that is designated for accumulating hazardous waste. It is not near the point of waste generation (like a Satellite Accumulation Area) and is subject to time or quantity limits according to generator status.

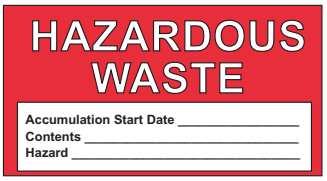
Accumulation Start Date is the date the clock starts for accumulation time limits that vary dependent on generator status.

Hazardous Waste Manifest is a special shipping paper that must accompany a shipment of hazardous waste. It is used to track who generated, transported and disposed of the hazardous waste.

Landfill Disposal Restriction (LDR) Form is a form that tells a disposal facility how the hazardous waste should be treated before it can be landfilled. This form is signed by the generator and accompanies the manifest.

How Do I Know a Waste is Hazardous?

Use your knowledge of the process and materials, use a Material Safety Data Sheet (MSDS) or test a representative waste sample.



You must determine if a waste is hazardous or nonhazardous. A registered transporter, disposal facility, or consultant may be able to assist you in characterizing your waste. You should complete a Waste Profile Sheet for each separate waste stream (e.g. inks, solvents, coatings, etc.) describing the waste and keep it on file. See pages 106 - 109 for sample Waste Profile Sheets or they may be provided by the disposal facility. If changes in your materials or printing operation cause the waste to change, then you must re-evaluate it to ensure proper classification, handling and disposal.

Wastes are hazardous if they are specifically "listed" or have certain characteristics. Below are four types of hazardous wastes. The four characteristics that make a waste hazardous are: corrosivity, ignitability, reactivity, and toxicity.

Hazardous Wastes

EPA Waste Codes	Waste Description	Typical Wastes
F001 to F039	**Non-Specific Source Wastes.** These are specific solvent wastes. Known as the "F-Listed Solvents".	Blanket washes with toluene, methylene chloride, xylenes in excess of 10% concentration.
K001 to K161	**Specific Source Wastes.** These are wastes from specific industries.	Printer wastes are not likely on this list.
P001 to P205 U001 to U411	**Discarded Commercial Chemicals, Container and Spill residues.** Few printing wastes are found on this list.	Printer wastes are not likely on this list.
D001 to D039	**Characteristic Wastes.** A waste that is not "listed", but may still be ignitable, corrosive, reactive or toxic according to certain waste testing procedures.	Blanket washes with petroleum solvents are ignitable. Silver-bearing wastewater is toxic. Speciality inks with metal pigments are toxic. Solvent inks, coatings and adhesives are ignitable.

Hazardous wastes generated by printers include: untreated spent fixer; petroleum-based cleaning solvents; ink contaminated with solvent; some speciality inks; and solvent-based coatings and adhesives. Subtractive plate, plate finishers and film developers are generally nonhazardous.

Lithographic inks are generally not regulated as hazardous, unless they are mixed with press cleaning solvents. The transporter may require

Just Do P2!

P2 & Toxics Reduction Tip

Some printers use acetone, toluene, 1,1,1-trichloroethane, or methylene chloride in their press cleaners. Because they are listed wastes, these wastes may be more costly to dispose of.

If possible, avoid using these solvents because of their toxicity, and substitute with petroleum naptha solvents. Most of F-Listed Solvents are also considered Hazardous Air Pollutants (page 17) and are regulated by OAQ.

Case Study

A large printer converted to a toluene-free press cleaning solvent eliminating his annual Release Reporting fees of $6,000.

you to test a representative sample of the waste ink to prove that it is nonhazardous. (You should have a Waste Profile Sheet and the necessary test results on file to show IDEM that the waste ink is nonhazardous.)

What are the General Hazardous Waste Management Requirements?

You must safely manage your hazardous wastes.

Hazardous wastes must be managed in a safe manner to protect your employees and the environment. All hazardous waste generators must:

- **Perform a hazardous waste determination on all waste streams.**
- **Track and record the amount of hazardous waste generated.**
- **Label all containers of hazardous waste to accurately identify the contents.**
- **Ensure delivery to a registered hazardous waste recycler, treatment, storage or disposal facility.**
- **Use DOT approved drums and containers for offsite shipments.**

Do not mix hazardous wastes and nonhazardous wastes. The resulting mix of wastes is generally regulated as hazardous.

You may have hazardous waste with a flash point of less than 100°F. Containers for these wastes must be electrically grounded when material is added or removed. This also applies to virgin materials with low flash points. See page 64.

How Do I Determine my Generator Status?

Prepare an inventory of all hazardous wastes you generate on a monthly basis.

If you generate hazardous waste, you must determine your generator status. Your status refers to the amount of hazardous waste you generate on a monthly basis. Remember - the more waste you generate, the more requirements that apply to your shop.

Generator Status of Magenta Printing Company

Activity	Waste	Hazardous?	Why?	Monthly Amount (lbs)
Prepress	Spent fixer	Yes	Toxic (> 5 ppm silver)	120
Pressroom	Waste cleaning solvents	Yes	Ignitable (flash point < 140°F)	175
Pressroom	Waste lithographic ink	No	Not toxic or ignitable	Not counted
Bindery	Waste solvent adhesives	Yes	Ignitable (flash point < 140°F)	40
Total Hazardous Waste Generated (lbs/month)				335

To determine your hazardous waste requirements, you must know your hazardous waste generator category. (From the example above, Magenta Printing generates about 335 pounds of hazardous waste each month.) In some months, a printer may generate more or less hazardous waste. Magenta Printing would be classified as a Small Quantity Generator of hazardous waste. Compare your monthly hazardous waste generation with the categories below. Remember, the lower your category, the few requirements that apply.

Case Study

Just Do P2!

After performing a hazardous waste inventory, a small printer evaluated different press cleaning methods to reduce blanket wash and its disposal costs. By using squirt bottles to blanket wash instead of open buckets, this printer reduced its blanket wash costs by $500 per year.

P2 Tip

Conditionally-Exempt Small Quantity Generator (CESQG) — generates less than 220 lbs/month or approx. 1/2 drum

Small Quantity Generator (SQG) — generates between 220 lbs./month and 2,200 lbs/month or approx. 1/2 -5 drums

Large Quantity Generator (LQG) — generates more than 2,200 lbs/month or more than 5 drums

Do I Need an EPA ID Number?

If you are a SQG or LQG, you must have a unique site-specific EPA ID number.

The ID number is used on the shipping papers. If you do not have an ID number, call the Indianapolis IDEM office to obtain a Notification of Hazardous Waste Activity Form (Form 8700-12) and get an EPA ID number. (EPA ID numbers are

All SQGs and LQGs must notify IDEM of their hazardous waste generator activity.

Important Tip

not required for CESQGs.) You should note that if you move your shop, you must notify IDEM to close out the old ID number and obtain a new EPA ID number for the new shop. Use Form 8700-12 for all EPA ID number changes.

Satellite Accumulation of Hazardous Wastes

You can accumulate hazardous waste near the point of generation without triggering the Accumulation Start Date.

You are allowed to accumulate hazardous wastes in a Satellite Accumulation Area where it is generated, for example, the pressroom or prepress area. You are limited to one 55 gallon drum of hazardous waste for each waste stream (waste blanket wash, waste ink, etc.). Each drum or container must be labeled and kept closed when not in use. See Figure 1 below.

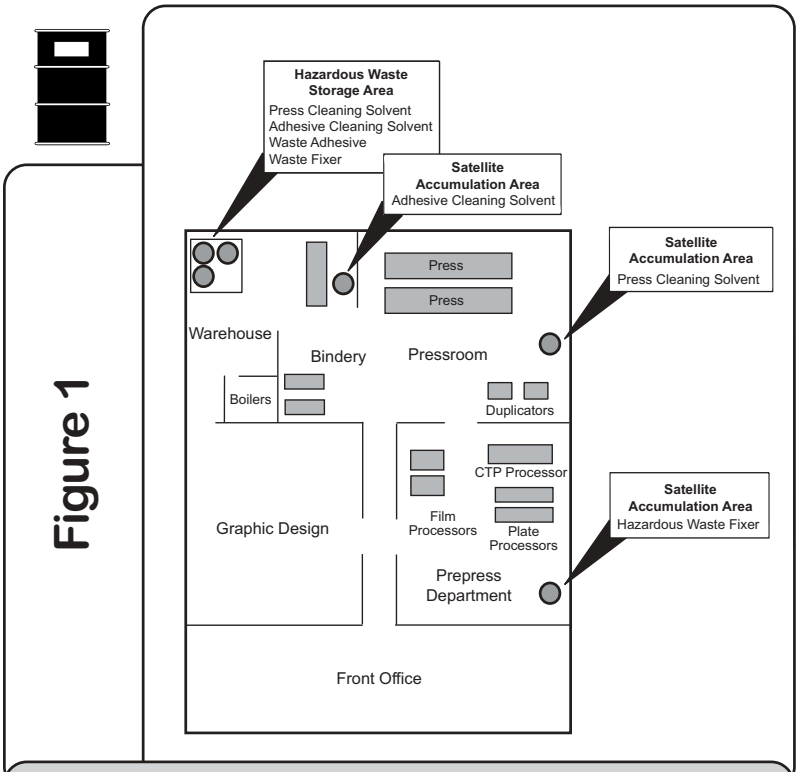


Figure 1

Hazardous Waste Accumulation Requirements

Satellite Accumulation Area

- Locate drums close to the process. Containers must be compatible with their contents.
- Label drums accurately and keep drums closed and clean.
- When it is full, move the drum to your Hazardous Waste Storage Area within three days of filling. If you do not have a Hazardous Waste Storage Area then ship offsite within applicable time limits (page 26).

Hazardous Waste Storage Area

- Label and date drum when the waste is first placed in the drum. (This is the Accumulation Start Date.)
- Keep drums closed, clean and in good condition.
- Whether the drum is full or not, ship offsite before the time limit or maximum quantity is reached.
- Inspect containers weekly for leaks and/or deterioration.

Hazardous Waste Storage Area

You may also accumulate hazardous waste in an area remote from its generation.

You can also accumulate hazardous waste in another part of your shop remote from the point of generation. This area is called a Hazardous Waste Storage Area. This area is subject to more requirements than a Satellite Accumulation Area. See Figure 1.

The accumulation time and quantity of hazardous waste you can accumulate in a Hazardous Waste Storage Area are restricted by IDEM. The limits are based on your generator status as follows:

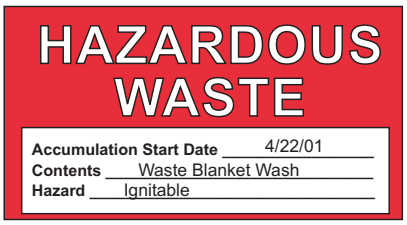
Hazardous Waste Accumulation Limits

Large Quantity Generator (LQG)	90 days, no limit on quantity
Small Quantity Generator (SQG)	180 days (270 days if shipped more than 200 miles), maximum of 13,200 lbs or approximately 30 drums
Conditionally-Exempt Small Quantity Generator (CESQG)	maximum 2,200 lbs or approximately four drums

If you exceed the quantity limits, you must renotify IDEM and comply with the additional requirements of the next higher generator status (e.g., go from a CESQG to a SQG). As a LQG, if you accumulate wastes for more than 90 days, you need a special storage permit. Obtaining this permit is a costly and lengthy process and you should make every effort not to exceed the 90 days.

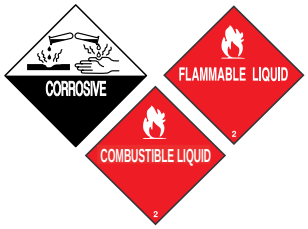
You may store your hazardous wastes outside and exposed to the elements, but it is recommended you store your wastes inside. Call IDEM for guidance on this issue.

How Must I Label my Hazardous Waste?



Containers of hazardous waste must be labeled at all times.

Label each container or tank “Hazardous Waste”; the name of the waste (e.g., waste presswash, or use the proper DOT shipping name); and the hazard (whether it is ignitable, toxic or corrosive). The label should be prominently displayed, when you first put waste into the container/tank. It must be visible at all times. Be sure it does not get faded, weathered or obliterated. If it does, replace the label. Use the example label here, or the “EPA Yellow Label” generally used by transporters. Labels are available from label supply companies.



You may also be required to mark certain hazardous wastes with a USDOT label at the time of shipment. The labels most likely to apply to printer wastes are: combustible, flammable or corrosive. These DOT labels are not required during waste accumulation, but they must be affixed to the container before shipment offsite.

How Do I Handle my Used Shop Towels?

You must handle your shop towels and disposable wipes in a environmentally sound manner.

There are two types of cleaning towels used by printers:

- Disposable wipers that are shipped offsite as waste.
- Reusable shop towels that are returned to a commercial laundry.

Nonhazardous wipers may be disposed as solid waste. You must show that wipers contaminated with solvent and ink are nonhazardous – generally by testing for flash point and listed solvents and metals (such as the F-solvents and listed metals on page 104).

As a general rule, if there is no free liquid solvent in the shop towel containers/drums used for accumulation, then the used shop towels can go to the laundry. Any solvent collected in the drum bottoms must be managed properly. If it has a flash point of less than 140°F or it is a F-listed solvent, then it is a hazardous waste and must be managed as such.

Air drying is not allowed because it releases pollutants into the air. Therefore, you should make efforts to minimize excess solvent or ink on shop towels. You can gravity drain excess solvent in a drum with a false bottom to collect the solvent. When the shop towels are picked up, empty the excess solvent for reuse or proper disposal as hazardous waste. You can also mechanically or hand wring the towels to remove and collect the waste solvent for disposal.

You must not use soiled shop towel containers for solvent waste disposal. Always store the soiled towels in

Just Do P2!

Waste Reduction Tip

Case Study

A midsize commercial printer purchased a small solvent recovery unit. Press operators were required to collect waste press cleaning solvent from ink trays, used solvent from plunger cans, and wring out saturated shop towels. The solvent was reclaimed and the printer was able to reduce their blanket wash use by almost 25%. They also reduced the amount of solvent on shop towels sent to the laundry.

closed containers. You should train employees to use separate containers for solvent and ink disposal. Press operators should not use reusable shop towels to line ink trays. They should also scrape ink off press parts and ink fountains before cleaning with shop towels or disposable wipers.

How Do I Ship my Hazardous Waste?

If you are an SQG or LQG, you must use a registered hazardous waste transporter to remove your hazardous waste.

Each shipment of hazardous waste must be accompanied by a uniform hazardous waste manifest. (Transporters may require CESQGs to use a manifest for shipping their wastes off-site, but the rules do not require CESQGs to use a manifest.) You may be able to obtain a manifest form from your transporter, broker, or Treatment, Storage, or Disposal Facility (TSDF). As of January 1, 2001, the Indiana manifest no longer exists. You are required to use the US EPA Uniform Hazardous Waste Manifest for shipments within Indiana or to another state that doesn't have its own manifest. If the other state has its own manifest, you are required to use that manifest. You should work with your transporter, broker, or TSDF to make sure you use the correct manifest.

You are responsible for sending the manifest copies to the appropriate destinations. Transporters and TSDFs may distribute the copies as a customer service. If, at the time of shipment, you are given more than one manifest copy (other than the generator copy as noted on the bottom of the manifest), then you must send the other manifest copy to the state receiving the wastes. As of January 1, 2001, you are no longer required to submit manifest copies to IDEM. See below on where to send the manifest copies. As a generator, you must always retain at least one copy of the manifest at the time of waste shipment.

In-State Disposal Facility		Copy sent to generator as an acknowledgment of receipt.
Out-of-State Disposal Facility		Copy sent to generator and, if required, to destination state as an acknowledgment of receipt.
Generator		Copy sent to destination state, if required. (only for out-of-state shipments)

The TSDF receiving your hazardous waste will send you a facility-signed copy of the manifest. You should staple your original copy and the facility-signed copy together and place in a file. If you have not received your facility-signed copy of the manifest, you must take steps to investigate the whereabouts of the shipment and manifest and/or contact IDEM about the situation. If you are a LQG, after 35 days of the waste shipment, you must investigate the whereabouts of the shipment and manifest. LQGs

only: If you do not have your facility-signed copy of the manifest after 45 days of the waste shipment (ten additional days), you must write a letter to IDEM describing your efforts and include a photocopy of the manifest in question and request assistance. This letter to IDEM is called an Exception Report. If you are a SQG, you are only required to submit an Exception Report to IDEM after 60 days of the waste shipment. SQGs are not required to investigate the whereabouts of the shipment and manifest prior to submitting the Exception Report to IDEM.

SQGs and LQGs must also sign and keep a copy of the Landfill Disposal Restriction (LDR) Form. This is a form for hazardous waste treatment requirements. This form is not required for CESQGs. The LDR is only required one time with each waste stream. If the waste stream ever changes or you get a new waste stream, you must prepare a new LDR. You should also keep the LDR with the corresponding manifest(s) copies. Your transporter or vendor may be able to provide this form.

What If I Recycle Hazardous Waste in my Shop?

You can recycle hazardous waste for reuse in your shop.

You can recycle hazardous waste for reuse in your shop without an IDEM permit, unless it results in air emissions and may be subject to those permitting requirements. (See page 12.) Some types of recycling activities in print shops include: Silver Recovery Units (SRUs); recycling units that filter waste inks for reuse; and solvent reclamation systems. (SRUs directly connected to the processor and discharging to a sewer are exempt from hazardous waste permitting See page 46 for more information on wastewater discharge permits.)

If you need guidance on waste recycling and permitting, contact IDEM's Office of Land Quality or CTAP. See contact information on page 113.

Emergency Response & Training for CESQGs

Hazardous waste emergency response procedures should be in place.

CESGQs are exempt from emergency response requirements for hazardous waste. However, they are strongly encouraged to have basic procedures in place. See next the section on SQG requirements.

You should note OSHA also requires an Emergency Action Plan for addressing workplace emergencies (including those related to hazardous waste) in your shop. Under this requirement, you must also provide employee awareness training on basic emergency response and evacuation. See page 66 for more information.

Emergency Response & Training For SQGs

SQGs are required to have emergency response procedures in place.

SQGs must have procedures in place to address emergency incidents relating to hazardous wastes. You must assign certain emergency response duties to an individual, the Emergency Coordinator. His/her duties include the following:

Post the following information next to your shop's telephones:

- **The name and telephone number of your shop's Emergency Coordinator;**
- **The location of your spill control material, fire extinguisher(s), and, if present, fire alarm.**
- **The telephone number of the fire department (unless your shop has a direct alarm.)**

Ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their job responsibilities.

Respond to emergencies that arise by doing the following:

- **In the event of a spill, contain and cleanup the hazardous waste and any contaminated materials or soil as soon as practicable. See page 76 for more information on spills.**
- **In the event of a fire, call the fire department. You can put out small fires with a fire extinguisher, if you are trained.**
- **Immediately notify the Fire Chief when a release of hazardous waste creates a threat to public safety from fire or explosion. (This applies to all hazardous materials, see page 76.)**
- **In the event of a fire, explosion, or a release which could threaten human health outside of the shop, or when you have knowledge that a spill could reach any water body, you must immediately notify IDEM's Emergency Response Section at (317) 233-7745 or toll free at (888) 233-7745. IDEM will ask you several questions and help you notify downstream water users.**

Emergency Response & Employee Training for LQGs

LQGs must formally prepare for emergency incidents.

If you are an LQG, there are more requirements that you must follow for emergency response (written Contingency Plan) and document employee training. Call OLQ or CTAP for more information.

Do I Need to File a USEPA Hazardous Waste Report?

There are two reports generators are required to submit to IDEM.

They are the Biennial Report, required by the US EPA, and the Manifest Summary Report, required by IDEM. The Biennial Report is a summary report of hazardous waste generation, on-site management and off-site shipments required by LQGs only. The Biennial Report is submitted by LQGs only to IDEM in March of every even-numbered (2000, 2002, etc.) year and covers the previous odd-numbered year's activity. If you have notified IDEM as being a LQG, you will automatically receive notice of the report being due and where to obtain the reporting forms and electronic report software.

As of January 1, 2001, LQGs and SQGs are required to complete and submit annually, in March, the Manifest Summary Report. The Manifest Summary Report is a compilation of the information found on your manifests from waste you shipped off-site in the previous year. The first report will be due March 1, 2002 and covers the previous year's shipments of hazardous waste. SQGs are required to submit this report annually to IDEM. Since LQGs are required to submit the Biennial Report every other year to IDEM, LQGs are only required to submit the Manifest Summary Report to IDEM the other years the Biennial Report is not due. The Manifest Summary Report forms will only be distributed to you the first reporting year. You will be required to keep the original forms and make copies of the forms as needed over the reporting years. New forms will not be sent out each year, but report forms will be available on the IDEM web site, www.in.gov/idem/olq.

The following is the reporting schedule for LQGs and SQGs:

March 1, 2002	LQGs Biennial Report and SQGs Manifest Summary Report
March 1, 2003	LQGs and SQGs Manifest Summary Report
March 1, 2004	LQGs Biennial Report and SQGs Manifest Summary Report
March 1, 2005 & thereafter	LQGs and SQGs Manifest Summary Report

Summary of Generator Requirements

Generators must manage their hazardous waste according to their generator status.

Summary of Generator Requirements

	CESQGs	SQGs	LQGs
Determine whether your wastes are hazardous and accurately characterize each waste.	√	√	√
Determine your hazardous waste generator status. Maintain records of quantity of waste generated monthly.	√	√	√
Obtain your site-specific generator EPA ID number.		√	√
Accumulate your hazardous waste in accordance with Figure 1. You must label all containers (page 26).		√	√
Keep a record of where your hazardous waste is shipped. Keep the manifests and receipts on file for at least three years. Landfill Disposal Restriction (LDR) forms must be kept for five years (not required for CESQGs). *(It is recommended that the records be kept indefinitely.)*	√	√	√
Accumulate no more than 220 gallons or 2,200 lbs (~4 drums).	√		
Accumulate no more than 13,200 lbs of hazardous waste in tanks or containers (~30 drums) at any time.		√	
Ship hazardous waste offsite within 180 days of the accumulation date or 270 days if sending > 200 miles offsite.		√	
Prepare for emergencies and conduct employee training. See page 30.		√	√
Conduct weekly inspections of hazardous waste storage areas. *(It is strongly recommended that you maintain a log of the inspections.)*		√	√
Prepare a written Contingency and Training Plan as described on page 31. Document employee training.			√
Ship hazardous waste offsite within 90 days of the accumulation date on the tank or container. There is no quantity limit.			√
Prepare a Hazardous Waste Minimization Plan for each hazardous waste you generate.		√	√
Use a hazardous waste manifest for shipping hazardous waste.		√	√
Send a copy of manifests used to ship hazardous waste out-of-state to destination state, if state requires.		√	√
Submit Exception Report to IDEM if you do not receive your facility-signed manifest copy within 45 days for LQGs or 60 days for SQGs.		√	√

Continued on next page

Summary of Generator Requirements (cont.)

	CESQGs	SQGs	LQGs
Submit a Hazardous Waste Biennial Report by March 1 of every even numbered year to IDEM			√
Submit a Manifest Summary Report by March 1 of every odd year to IDEM.			√
Submit a Manifest Summary Report by March 1 every year to IDEM.		√	

Just Do P2!

Case Study

A print shop reduced its press cleaning solvent wastes by using squirt bottles instead of rag plunger cans and diluting the blanket wash with water (approximately 10%). This resulted in lower blanket wash use, saving the printer 4-6 drums of blanket wash annually. The printer could also downgrade its LQG generator status to a SQG and reduced the shop's hazardous waste management requirements.